FOR PUBLICATION

UNITED STATES COURT OF APPEALS
FOR THE NINTH CIRCUIT

CENTER FOR BIOLOGICAL DIVERSITY; DEFENDERS OF WILDLIFE; FRIENDS OF THE EARTH; GREENPEACE USA; PACIFIC ENVIRONMENT, *Petitioners*, v. DAVID BERNHARDT; BUREAU OF OCEAN ENERGY MANAGEMENT; UNITED STATES FISH AND WILDLIFE SERVICE, *Respondents*, HILCORP ALASKA LLC, *Respondent-Intervenor*.	No. 18-73400 OPINION

On Petition for Review of an Order of the
Bureau of Land Management, Interior

Argued and Submitted November 5, 2019
Portland, Oregon

Filed December 7, 2020

Before: Richard A. Paez and Johnnie B. Rawlinson, Circuit Judges, and Leslie E. Kobayashi,* District Judge.

Opinion by Judge Paez

SUMMARY**

Appellate Jurisdiction / Environmental Law

The panel granted in part, and denied in part, a petition for review brought by plaintiff conservation groups challenging the U.S. Department of Interior's Bureau of Ocean Energy Management ("BOEM")'s approval of the Liberty project – an offshore drilling and production facility along the coast of Alaska in the Beaufort Sea; vacated BOEM's approval of the project; and remanded to the agency for further proceedings.

The site of the Liberty project is governed by the Outer Continental Shelf Lands Act ("OCSLA"). Before Hillcorp Alaska, LLC could begin drilling, it had to obtain approval of the Liberty project from BOEM. Three environmental statutes and their concomitant regulations governed BOEM's approval: the National Environmental Policy Act ("NEPA"); the Endangered Species Act ("ESA"); and the Marine Mammal Protection Act of 1973. Relying on a biological opinion prepared by the U.S. Fish and Wildlife

* The Honorable Leslie E. Kobayashi, United States District Judge for the District of Hawaii, sitting by designation.

** This summary constitutes no part of the opinion of the court. It has been prepared by court staff for the convenience of the reader.

Service and BOEM's environmental impact statement ("EIS"), BOEM's Regional Supervisor of Leasing and Plans signed a record of decision approving the Liberty project.

The panel held that it had original jurisdiction over plaintiff's challenge to BOEM's approval of the Liberty project under the OCSLA's 43 U.S.C. § 1349(c)(2), which included plaintiff's challenge to the EIS prepared under NEPA and the biological opinion prepared under the ESA. The panel held that it also had jurisdiction over plaintiff's claims that BOEM's conditional approval of the Liberty project violated the ESA. The panel further held that the two statutes relevant to plaintiff's Section 7 ESA claim – the OCSLA and the ESA - had conflicting jurisdictional provisions, and it would follow the more specific statute – the OCSLA. The OCSLA bifurcated jurisdiction between the courts of appeal and district courts. The panel concluded that under the OCSLA, it had jurisdiction to review whether BOEM's approval violated the ESA.

The panel concluded that BOEM acted arbitrarily and capriciously by failing to quantify the emissions resulting from foreign oil consumption in its EIS as required by the NEPA, or, at least, explaining thoroughly why it could not do so and summarizing the research upon which it relied. The panel also held that the Fish and Wildlife Service violated the ESA by (1) relying upon uncertain, nonbinding mitigation measures in reaching its no-adverse-effect conclusion in its biological opinion, and (2) failing to estimate the Liberty project's amount of nonlethal take of polar bears. Because the panel concluded that Fish and Wildlife Service's biological opinion was flawed and unlawful, the panel further concluded that BOEM's reliance on the Fish and Wildlife Service's opinion was arbitrary and

capricious. In all other respects, the panel denied the petition for review.

COUNSEL

Rebecca Noblin (argued) and Jeremy C. Lieb, Earthjustice, Anchorage, Alaska; Eric P. Jorgensen, Earthjustice, Juneau, Alaska; Kristen Monsell and Emily Jeffers, Center for Biological Diversity, Oakland, California; for Petitioners.

James A. Maysonett (argued), Attorney, Appellate Section; Eric Grant, Deputy Assistant Attorney General; Jeffrey Bossert Clark, Assistant Attorney General; Environment & Natural Resources Division, United States Department of Justice, Washington, D.C.; for Respondents.

Svend A. Brandt-Erichsen (argued) and Linda R. Larson, Nossaman LLP, Seattle, Washington, for Respondent-Intervenor.

OPINION

PAEZ, Circuit Judge:

Hilcorp Alaska, LLC, is an energy management company seeking to produce crude oil from Foggy Island Bay, along the coast of Alaska in the Beaufort Sea. To extract the oil from under the Beaufort Sea, Hilcorp will need to construct an offshore drilling and production facility. The facility—referred to as "the Liberty project," or "the Liberty prospect"—will be the first oil development project fully submerged in federal waters. Hilcorp estimates that the site contains about 120 million barrels of recoverable oil,

which it hopes to extract over the course of fifteen to twenty years.

The site of the Liberty project is within the outer Continental Shelf of the United States and thus governed by the Outer Continental Shelf Lands Act ("OCSLA"),[1] 43 U.S.C. § 1331 *et seq*. OCSLA allows the Department of Interior—which houses the Bureau of Ocean Energy Management ("BOEM")—to oversee the mineral exploration and development of the outer Continental Shelf.[2] Administering the use of the Shelf under OCSLA may include leasing federal land for oil and gas production to entities like Hilcorp. *See* 43 U.S.C. §§ 1344; 1331(c), (k)–(m). OCSLA requires BOEM to manage the outer Shelf in "a manner which considers [the] economic, social, and environmental values" of the Shelf's natural resources. 43 U.S.C. § 1344(a)(1).

Before Hilcorp can begin drilling, it must obtain approval of the project from BOEM. Three environmental statutes and their concomitant regulations govern BOEM's approval. First, approval of the Liberty project is considered a "major Federal action" under the National Environment Policy Act ("NEPA"), 42 U.S.C. § 4321 *et seq*. *See* 42 U.S.C. § 4332(C); 40 C.F.R. § 1508.18. NEPA requires BOEM to draft an "environmental impact statement"

[1] We include a glossary of acronyms in an Appendix attached to this opinion.

[2] The outer Continental Shelf includes "all submerged lands lying seaward of state coastal waters (3 miles offshore) which are under U.S. jurisdiction." *OCS Lands Act History*, U.S. Department of the Interior, Bureau of Ocean Energy Management, http://www.boem.gov/oil-gas-energy/leasing/ocs-lands-act-history (last visited Aug. 19, 2020); *see also* 43 U.S.C. § 1331(a).

("EIS") evaluating the environmental consequences of the drilling and oil extraction. 42 U.S.C. § 4332(C). The EIS must contain, among other things, a statement of purpose, a description of the project, and a comparison of the Liberty project with other reasonable alternatives for extracting oil. *Id.*; 40 C.F.R. § 1502.12–1502.14. It must also include a "no action" alternative, in which BOEM evaluates the relative consequences of not approving any drilling in the Beaufort Sea. 40 C.F.R. § 1502.14(c). This comparative analysis is "the heart" of the EIS. *Id.* § 1502.14.

Second, the remarkable biodiversity of the drilling site implicates the Endangered Species Act of 1973 ("ESA"), 16 U.S.C. § 1531 *et seq*. The Liberty project requires the construction of an offshore gravel island, wells, a pipeline to transport the oil, gravel pads to support the intersections between pipes, ice pads, a hovercraft shelter, a small boat dock, a gravel mine, and additional ice roads and crossings. The gravel island's proposed site is in the middle of "the Boulder Patch," an isolated area of boulders and cobbles that supports the only high arctic kelp forest in the Alaskan Arctic and produces unusual species diversity and biomass. The Bay is home to a wealth of threatened and endangered marine mammals, including polar bears, six species of whales, three species of seals, sea lions, sea otters, and Pacific walruses. Seabirds, numerous species of fish, and larger mammals all frequent the shallow waters around the Bay.

The ESA requires BOEM to ensure that its approval of the project does not jeopardize an endangered or threatened species or destroy or adversely modify the species's habitat. 16 U.S.C. § 1536(a)(2). BOEM must consult with either the U.S. Fish and Wildlife Service ("FWS") or the National Marine Fisheries Service ("NMFS"), depending on the

species at risk, and then either FWS or NMFS must prepare a biological opinion to determine whether the agency's proposed action will jeopardize a species. *Id.* § 1536(b)–(c). If BOEM concludes that the proposed action will not jeopardize a species or adversely modify its critical habitat—but that the project will result in the "incidental take" of the members of a species—FWS or NMFS must provide an "incidental take statement" authorizing such takings. A "take" occurs under the ESA when an animal is harassed, harmed, pursued, hunted, shot, wounded, killed, trapped, captured, or collected, or when anyone attempts to engage in such conduct. 16 U.S.C. § 1532(19).

Third and finally, the proposed project must comply with the Marine Mammal Protection Act of 1972 ("MMPA"), 16 U.S.C. § 1361 *et seq*. The MMPA is narrower but more restrictive than the ESA. It broadly prohibits the take of any marine mammal. 16 U.S.C. § 1371(a). Under the MMPA, the Department of Interior may promulgate incidental take regulations that allow an agency to take marine mammals where such take is "in accord with sound principles of resource protection and conservation" as provided in the MMPA. *Id.* § 1371(a)(3)(A).

Relying on a biological opinion prepared by FWS and BOEM's own EIS, BOEM's Regional Supervisor of Leasing and Plans signed a record of decision approving the Liberty project. The Center for Biological Diversity and four other conservation organizations (collectively, "CBD"), dispute the legality of BOEM's and FWS's actions, arguing that the agencies failed to comply adequately with the procedural requirements imposed by NEPA, the ESA, and the MMPA. Specifically, CBD claims that (1) BOEM violated NEPA by arbitrarily and capriciously estimating the environmental consequences of the alternatives included in the EIS;

(2) FWS violated the ESA and MMPA by producing a legally inadequate biological opinion; and (3) BOEM violated the ESA by relying on FWS's unlawful biological opinion to approve the Liberty project. Hilcorp intervened on behalf of BOEM. We agree in part with CBD and vacate BOEM's approval of the project.

I. Court of Appeals Review

A. Jurisdiction

We have original jurisdiction over CBD's challenge to BOEM's approval of the Liberty project under 43 U.S.C. § 1349(c)(2) ("Any action of the Secretary to approve . . . any development and production plan under this subchapter shall be subject to judicial review only in a United States court of appeals for a circuit in which an affected State is located."). This includes CBD's challenge to the EIS prepared under NEPA and the biological opinion prepared by FWS under the ESA. *See* 16 U.S.C. § 1531; *Am. Bird Conservancy v. F.C.C.*, 545 F.3d 1190, 1191 (9th Cir. 2008).

We also have jurisdiction over CBD's claims that BOEM's conditional approval of the Liberty project violated the ESA. "[W]hen a Section 7 claim challenges an agency order issued pursuant to a substantive statute with a 'more specific' judicial review scheme than the ESA, courts must evaluate the plaintiff's claims under the jurisdictional provisions of that substantive statute." *Ctr. for Bio. Diversity v. E.P.A.*, 847 F.3d 1075, 1089 (9th Cir. 2017) (quoting *Am. Bird. Conservancy*, 545 F.3d at 1194). When two claims are "inextricably intertwined between two statutes," "and those statutes contain conflicting jurisdictional provisions," we follow the more specific statute. *Id.*

The two statutes relevant to CBD's Section 7 ESA claim are OCSLA and the ESA, and they have conflicting jurisdictional provisions. OCSLA grants standing to "any person" to "compel compliance" with the Act. 43 U.S.C. § 1349(a)(1). A court of appeals has original jurisdiction under OCSLA to review the Secretary of the Interior's action where that action is "to approve, require modification of, or disapprove . . . any development and production plan" under the Act. *Id.* § 1349(c)(2). If the agency action does not "approve, require modification of, or disapprove" any plan, but still arises from (1) "any operation . . . which involves . . . development" or (2) "the cancellation, suspension, or termination of a lease or permit," then federal district courts have jurisdiction to review the agency action. *Id.* § 1349(b)(1).

The ESA instead allows a citizen to "commence a civil suit on his own behalf . . . to enjoin any person, including the United States and any other governmental instrumentality or agency . . . , who is alleged to be in violation of any provision of this chapter or regulation issued under the authority thereof[.]" 16 U.S.C. § 1540(g)(1)(A). The ESA citizen-suit provision also provides, "The district courts shall have jurisdiction, without regard to the amount in controversy or the citizenship of the parties, to enforce any such provision or regulation, or to order the Secretary to perform such act or duty[.]" *Id.* § 1540(g)(1).

OCSLA is the more specific jurisdictional statute. It bifurcates jurisdiction between the courts of appeal and district courts, and it refers specifically to BOEM's "approv[al]" of development plans, like the one at issue here. Additionally, OCSLA and the ESA are "inextricably intertwined": BOEM's lawful approval under OCSLA is contingent on whether it properly complies with the ESA.

Under OCSLA, then, we have jurisdiction to review whether BOEM's approval of the Liberty project violated the ESA. 43 U.S.C. § 1349(c)(2).

B. Standard of Review

NEPA, the ESA, and the MMPA all lack independent judicial review provisions. Claims arising under all three are therefore reviewed under the Administrative Procedure Act ("APA"), 5 U.S.C. § 551 *et seq*., which authorizes courts to set aside agency actions, findings, and conclusions if they are "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law," 5 U.S.C. § 706(2)(A); *see also Klamath-Siskiyou Wildlands Ctr. v. Bureau of Land Mgmt.*, 387 F.3d 989, 992 (9th Cir. 2004).

In reviewing the adequacy of an EIS under NEPA, we employ "a rule of reason" analysis to determine whether the discussion of the environmental consequences included in the EIS is sufficiently thorough. *Kern v. U.S. Bureau of Land Mgmt*., 284 F.3d 1062, 1071 (9th Cir. 2002) (internal quotation marks omitted). The rule of reason analysis requires evaluating whether the agency took a sufficiently "hard look" at probable consequences; it is "essentially the same" as an abuse of discretion analysis. *Id.* at 1071–72 (internal quotation marks omitted).

II. NEPA

A. The EIS Process

We begin with CBD's challenge to BOEM's NEPA compliance. NEPA "is our basic national charter for protection of the environment." 40 C.F.R. § 1500.1(a). The statute provides environmental protection not by mandating "particular results," but by prescribing the process that an

agency must follow to evaluate and approve an action that will have environmental consequences. *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 350 (1989).

The EIS is the linchpin of NEPA's procedural requirements. An EIS must be prepared for any and all "major Federal actions significantly affecting the quality of the human environment."[3] 42 U.S.C. § 4332(C); *see also Ctr. for Bio. Diversity v. U.S. Dep't of Interior*, 623 F.3d 633, 642 (9th Cir. 2010).

The purpose of the EIS is twofold: first and foremost, it is an action-forcing device, ensuring that the goals of NEPA are infused into the government's actions. 40 C.F.R. § 1502.1.[4] NEPA's requirements "are to be strictly interpreted 'to the fullest extent possible' in accord with the policies embodied in the Act." *State of Cal. v. Block*, 690 F.2d 753, 769 (9th Cir. 1982) (quoting 42 U.S.C. § 4332(1)). Second, the EIS provides important information

[3] A "[m]ajor Federal action" includes an action with "effects that may be major" and is "potentially subject to Federal control and responsibility." 40 C.F.R. § 1508.18. The "[a]pproval of specific projects, such as construction or management activities located in a defined geographic area," may be major federal actions. *Id.* § 1508.18(b)(4). "Projects" can "include actions approved by permit or other regulatory decision as well as federal and federally assisted activities." *Id.*

[4] We rely on two sets of NEPA regulations. The NEPA regulations promulgated by the Council on Environmental Quality (CEQ), codified at 40 C.F.R. §§ 1500.1–1508.28, provide NEPA guidance to all federal agencies. The Department of Interior, like many other agencies, has also promulgated its own NEPA regulations, codified at 43 C.F.R. §§ 46.10–46.450, to be used alongside the CEQ regulations.

to the public and any party interested in the proposed environmental action. *See Robertson*, 490 U.S. at 356.

Agencies prepare EISs in two stages. *See* 40 C.F.R. § 1502.9(a). First, the agency creates a draft EIS. *See* 40 C.F.R. § 1502.9(b). The draft examines the scope of the federal action, evaluates the consequences of the action, and includes viable alternatives for the project. *Id.*; *see also* 42 U.S.C. § 4332(c). The agency has discretion to develop the alternatives it considers, *see Citizens Against Burlington, Inc. v. Busey*, 938 F.2d 190, 195 (D.C. Cir. 1991), but a "no action alternative"—in which the agency evaluates the consequences of taking no action—must be considered in every EIS, to provide a baseline against which every action alternative is evaluated, *see* 40 C.F.R. § 1502.14(d). The no-action alternative analysis should be "[i]nformed and meaningful," *Bob Marshall All. v. Hodel*, 852 F.2d 1223, 1228 (9th Cir. 1988), and the agency must not minimize negative side effects, *N. Alaska Envtl. Ctr. v. Kempthorne*, 457 F.3d 969, 975 (9th Cir. 2006).

The discussion of environmental consequences must be "reasonably thorough." *Kern*, 284 F.3d at 1071. NEPA emphasizes the early presentation of relevant information to facilitate reaching fully informed decisions. *See Blue Mountains Biodiversity Project v. Blackwood*, 161 F.3d 1208, 1216 (9th Cir. 1998). Drafting an EIS "necessarily involves some degree of forecasting," and the agency "must use its best efforts to find out all that it reasonably can" when predicting the environmental effects of the proposed action. *City of Davis v. Coleman*, 521 F.2d 661, 676 (9th Cir. 1975).

After completing the draft, the agency must then "[m]ake diligent efforts to involve the public in preparing and implementing [its] NEPA procedures," including soliciting public comments where appropriate. 40 C.F.R. § 1506.6(a);

see also id. § 1506.6(b)–(f). The substantive comments received by the agency, and the agency's responses to them, are attached to the final EIS. *See Block*, 690 F.2d at 772–73 (quoting 40 C.F.R. § 1500.10(a)).

* * *

CBD argues that BOEM's EIS is arbitrary and capricious under the APA because BOEM improperly (1) relied on different methodologies in calculating the lifecycle greenhouse gas emissions produced by the no-action alternative and the other project alternatives, thus making the options incomparable, and (2) failed to include a key variable (foreign oil consumption) in its analysis of the no-action alternative. We consider each in turn.

B. Comparison of the Action and No-Action Alternatives

CBD argues that BOEM unlawfully used different methodologies to calculate the greenhouse gas emissions resulting from the Liberty project and the no-action alternative. We disagree.

CBD is correct that using different methodologies to capture the emissions resulting from each alternative would indeed prevent the agency from making an "informed and meaningful" choice, *see Bob Marshall All.*, 852 F.2d at 1228, because the alternatives would be incomparable. But the record indicates that BOEM did not apply different methods in comparing the action and the no-action alternatives.

In its final EIS, BOEM considered various alternatives: the Proposed Action (the Liberty project), other action alternatives (each of which propose different strategies,

locations, or other modifications of the Proposed Action), and the no-action alternative, in which BOEM analyzed the effects of not leasing the land at all. To calculate the emissions for each of the action alternatives, BOEM calculated both the "upstream" and the "downstream" emissions. Upstream emissions are those that result directly from the project itself (e.g., construction and operation), and downstream emissions are those that result from the consumption of the oil produced by the project (e.g., heating homes or fueling cars). BOEM then summed the two types of emissions, resulting in a "lifecycle greenhouse gas emissions" estimate for each alternative. To facilitate comparisons across the action alternatives, the total lifecycle emissions for each proposed plan were converted to metric tons of "carbon dioxide equivalents"—even though emissions would include methane, nitrous oxide, and other greenhouse gases.

The lifecycle greenhouse gas emissions for the no-action alternative were not calculated by directly summing its upstream and downstream emissions. The upstream emissions for the no-action alternative are, clearly, zero. The direct downstream emissions of the no-action alternative are zero, but—as BOEM recognized—its indirect downstream emissions may be much higher. Not drilling at the proposed site may cause global oil supply to fall, demand to rise, and, as a result, require drilling and oil extraction elsewhere. To capture these indirect downstream emissions, BOEM used a market-simulation model to predict the greenhouse gas emissions for energy sources that would substitute for the oil not produced at Liberty.

CBD argues that the use of this model renders the choices incomparable. But, as the government notes, the Proposed Action and action alternatives implicitly take this

analysis into account: if the Liberty site is developed, none of the emissions in other parts of the United States estimated under the no-action alternative will result. In other words, BOEM could have instead used the market simulation model to offset the emissions calculated under each of the action alternatives and then compared it to zero, the lifecycle emissions produced by the no-action alternative. Summing all emissions from the proposed project assumes that, if Liberty is developed, there would be no need for the other sites to satisfy demand under the no-action alternative. The total numbers would be different, but the absolute differences between them would be the same. Both methods of calculation result in net—not gross—emissions. The analysis is ultimately a relative comparison, sufficient for making a "reasoned choice among alternatives." 40 C.F.R. § 1502.22(a). We conclude BOEM did not arbitrarily and capriciously apply a different method of calculation in estimating the emissions from the action and no-action alternatives.

C. Omission of Emissions Resulting from Foreign Oil Consumption

But CBD's second argument is persuasive. CBD argues that BOEM arbitrarily failed to include emissions estimates resulting from foreign oil consumption in its analysis of the no-action alternative. In its EIS, BOEM concluded that the Proposed Action and the action alternatives would each produce about 64,570,000 metric tons of carbon dioxide equivalents. It then estimated that the no-action alternative would produce—somewhat perplexingly—89,940,000 metric tons of carbon dioxide equivalents, 25,370,000 *more* metric tons than if the land were leased under any scenario. The EIS explains that the no-action alternative will result in more emissions because the oil substituted for the oil not

produced at Liberty will come from places with "comparatively weaker environmental protection standards associated with exploration and development of the imported product and increased emissions from transportation." CBD explains that BOEM reached this counterintuitive result by omitting a key variable in its analysis: foreign oil consumption.

Understanding why foreign oil consumption is critical to BOEM's alternatives analysis requires some basic economics principles. If oil is produced from Liberty, the total supply of oil in the world will rise. Increasing global supply will reduce prices. Once prices drop, foreign consumers will buy and consume more oil. The model used by BOEM assumes that foreign oil consumption will remain static, whether or not oil is produced at Liberty.

This omission, according to CBD, makes BOEM's analysis "misleading" because it fails to capture the emissions caused by increased global consumption in its estimate of Liberty's downstream emissions. BOEM acknowledges that the no-action alternative will cause foreign oil consumption to decline; the EIS estimates that the no-action alternative will result in a reduction in oil consumption of one, four, or six billion barrels of oil, depending on the market price of oil. But the impacts on greenhouse gas resulting from such reductions in oil consumption "are not captured" in the EIS because BOEM determined it did not have sufficiently "reliable information on foreign emissions factors and consumption patterns." CBD replies that BOEM was both required and able to estimate the variable and include its effect. We agree.

NEPA requires agencies to evaluate the direct and indirect effects of the proposed action. 40 C.F.R. § 1502.16. Indirect and direct effects are both "caused by the action,"

but direct effects occur "at the same time and place" as the proposed project, while indirect effects occur "later in time or [are] farther removed in distance." 40 C.F.R. § 1508.8(a), (b). The agency need consider only indirect effects that are "reasonably foreseeable," *id.* § 1508.8(b); or those that "a person of ordinary prudence would take [] into account in reaching a decision." *EarthReports, Inc. v. F.E.R.C.*, 828 F.3d 949, 955 (D.C. Cir. 2016) (internal quotation marks omitted); *see also* 40 C.F.R. § 1502.22(b). An increased risk of an oil spill caused by an increase in crude oil tanker traffic, for example, is a reasonably foreseeable indirect effect of a proposed dock extension. *See Ocean Advocates v. U.S. Army Corps. of Eng'rs*, 402 F.3d 846, 867–70 (9th Cir. 2005). "[G]rowth inducing effects" to a forest that result from a project that alters "pattern[s] of land use" are also indirect impacts that must be considered. 40 C.F.R. § 1508.8.

An EIS that does not adequately consider the indirect effects of a proposed action violates NEPA. In *Sierra Club v. Federal Energy Regulatory Comm'n*, 867 F.3d 1357 (D.C. Cir. 2017), for example, the D.C. Circuit concluded that the Federal Energy Regulatory Commission had unlawfully conducted its EIS for a natural gas pipeline project because it failed to quantify the indirect greenhouse gas emissions that would result from the burning of the natural gas transported by the pipelines. *Id.* at 1374. The agency should have "either given a quantitative estimate of the downstream greenhouse emissions," or "explained more specifically why it could not have done so." *Id.* Greenhouse gas emissions were an indirect, reasonably foreseeable consequence of the pipeline, and FERC's justification for its omission—that "emission estimates would be largely influenced by assumptions rather than direct parameters about the project"—was unsatisfactory. *Id.* The effects of the

agency's assumptions on its estimates simply "can be checked" by disclosing the estimates so that readers could make informed decisions regarding the project and its consequences. *Id.*; *see also WildEarth Guardians v. Zinke*, 368 F. Supp. 3d 41, 68 (D.D.C. 2019) (determining that an agency's assertion that "quantifying [greenhouse gas] emissions . . .would be overly speculative" was "belied by an administrative record replete with information on oil and gas development and [greenhouse gas] emissions").

BOEM refers to the omission of foreign oil consumption in two separate pages of the final, 600-page EIS. The first is in Appendix B of the EIS, in response to public comments expressing concern over the omission of foreign oil consumption. BOEM responds only that "[c]ontext suggests that any change in foreign oil consumption resulting from the pending decision on the Liberty DPP would be very small,"[5] and because "Liberty DPP represents a very small fraction of the amount of oil comprising the global market," it "could only have a negligible impact on worldwide oil prices and, as a result, only a negligible impact on foreign consumption and emissions levels." It adds that "[e]ven if BOEM could reliably estimate these marginal differences (which it cannot, given the lack of reliable information on foreign emissions factors and consumption patterns), such estimates would not change the end results of BOEM's analysis to a meaningful extent." BOEM cites to no evidence in support of these conclusions and does not provide any further explanation for the omission.

Appendix B then refers readers to a general report, incorporated by reference into the EIS, that describes the market-simulation model and its limitations. The relevant

[5] "DPP" is shorthand for "development and production plan."

portion of that report explains that "[e]xcluding the foreign oil and gas markets is reasonable" because "[o]il consumption in each country is different, and BOEM does not have information related to which countries would consume less oil." Again, BOEM does not cite any materials in support of these statements nor describe the research it relied upon to reach these conclusions.

This is insufficient to satisfy NEPA's requirements. Emissions resulting from the foreign consumption of oil are surely a "reasonably foreseeable" indirect effect of drilling at Liberty, just as foreseeable as the emissions resulting from the consumption of oil produced at sites other than Liberty, which the market-simulation model already considers. Even if the extent of the emissions resulting from increased foreign consumption is not foreseeable, the nature of the effect is. *Mid States Coal. for Progress v. Surface Transp. Bd.*, 345 F.3d 520, 549 (8th Cir. 2003). This is sufficient to require estimation or explanation under NEPA. *Id.*

The record belies BOEM's contention that it could not have summarized or estimated foreign emissions with accurate or credible scientific evidence. *See Seattle Audubon Soc. v. Espy*, 998 F.2d 699, 704–05 (9th Cir. 1993). Various studies provided by CBD in the administrative record confirm the effect of increasing domestic oil supply on foreign consumption and the feasibility of its estimation. In one study, the Stockholm Environment Institute—noting that BOEM omitted the same calculation in its analysis of the effects of the Keystone Pipeline—demonstrates how an increase in foreign oil consumption translates into greenhouse gas emissions. *See* Peter Erickson, *U.S. Again Overlooks Top CO2 Impact of Expanding Oil Supply, but That Might Change*, Stockholm Environment Institute (Apr. 30, 2016), http://www.sei.org/perspectives/us-co2-impact-

oil-supply. Using a "simple calculation," relying on parameters publicly provided in BOEM's report, the Institute calculates the expected resultant greenhouse gas emissions from increased foreign consumption of oil. It concludes that developing the Pipeline would cause an increase in global oil consumption ten times greater than the increase in domestic consumption forecasted by BOEM. Other studies in the record confirm the same: domestic consumption impacts foreign oil consumption, and increases in foreign oil consumption can be translated into estimates of greenhouse gas emissions. *See* Peter Erickson and Michael Lazarus, *Impact of the Keystone XL Pipeline on Global Oil Markets and Greenhouse Gas Emissions*, Nature Climate Change 778, 778–80 (2014) (modeling increased global oil consumption caused by the Keystone Pipeline and finding an increase in greenhouse gas emissions four times greater than that predicted by the model that did not account for global oil market effects). Jason Bordoff and Trevor Houser, *Navigating the U.S. Oil Export Debate*, Columbia SIPA Center on Global Energy Policy, Jan. 2015, at 57 (assessing the net greenhouse gas impact of an increase in global crude oil demand under different scenarios).

BOEM now explains that these studies rely on "simplistic assumptions that [fall] well short of the detailed model that BOEM used to analyze the U.S. energy market," but it is unclear from the record why these assumptions are any more simplistic than those the market-simulation model incorporates. The model assumes, for example, near constant oil and gas demand over the next 40 to 70 years, an unrestricted supply of foreign oil for substitution, and that all oil and gas produced domestically is consumed domestically. BOEM's conclusion for the higher emissions produced by the no-action alternative assumes that the petroleum products substituted for oil not produced at

Liberty will come from places with "comparatively weaker environmental protection standards." It is unclear from the administrative record what justifies these assumptions and not those needed to estimate foreign oil consumption.

Even if the nature of BOEM's assumptions did not sufficiently demonstrate the need for further explanation, the result upon which the agency relied surely did. BOEM's conclusion that *not* drilling will result in more carbon emissions than drilling is counterintuitive. An agency acts arbitrarily and capriciously when it reaches a decision that is "so implausible that it could not be ascribed to a difference in view or the product of agency expertise." *Motor Vehicle Mfrs. Ass'n of U.S., Inc. v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983). Without further explanation, we cannot ascribe the implausibility of the result to BOEM's expertise or rational decision-making. We will uphold a decision "of less than ideal clarity if the agency's path may be reasonably discerned," but we cannot "supply a reasoned basis for the agency's action that the agency itself has not given." *Id.* at 43, 57 (internal quotation marks omitted).

We "understand that in some cases quantification may not be feasible." *Sierra Club*, 867 F.3d at 1374. But even if BOEM is unable to quantitatively evaluate the emissions generated by foreign countries in the absence of the Liberty project, it still must thoroughly explain why such an estimate is impossible. The Department of Interior has promulgated a regulation addressing such situations, where "incomplete or unavailable information" impedes the agency's ability to evaluate a "reasonably foreseeable significant adverse effect[]" of the project. 40 C.F.R. § 1502.22. The regulation requires the agency to include a statement explaining that the information is lacking, its relevance, a summary of any existing credible evidence evaluating the foreseeable

adverse impacts, and the agency's evaluation of the impacts based upon "theoretical approaches or research methods generally accepted in the scientific community." 40 C.F.R. § 1502.22(b)(1). These requirements are read "in the context of the more general requirements for preparation of an EIS," including the "rigorous evaluation" of the indirect, direct, and cumulative effects of the selected alternatives. National Environmental Policy Act Regulations, 50 FR 32,234, 32,237 (Aug. 9, 1985); *see also* 40 C.F.R. §§ 1502.16(a)–(b), 1508.8(b).

The EIS's two-page explanation of BOEM's decision to omit foreign oil emissions is insufficient to meet these requirements. BOEM did not summarize existing research addressing foreign oil emissions nor attempt to estimate the magnitude of such emissions. It cannot ignore basic economics principles and state—without citations or discussion—that the impact of the Liberty project on foreign oil consumption will be negligible. *See WildEarth Guardians v. Bureau of Land Mgmt.*, 870 F.3d 1222, 1237–38 (10th Cir. 2017); *Mont. Envtl. Info. Ctr. v. U.S. Off. of Surface Mining*, 274 F. Supp. 3d 1074, 1098 (D. Mont. 2017). Nor can it ignore this foreseeable effect entirely. EIS estimates often involve some "[r]easonable forecasting and speculation." *Scientists' Inst. For Pub. Info., Inc. v. Atomic Energy Comm'n*, 481 F.2d 1079, 1092 (D.C. Cir. 1973). Some "educated assumptions are inevitable in the NEPA process," and the "effects of assumptions on estimates can be checked by disclosing those assumptions so that readers can take the resulting estimates with the appropriate amount of salt." *Sierra Club*, 867 F.3d at 1374.

We note that we typically accord significant deference to an agency's decisions that require a "high level of technical expertise." *Kleppe v. Sierra Club*, 427 U.S. 390, 412 (1976).

But such deference applies only when the agency is making predictions "within its area of special expertise." *Baltimore Gas & Elec. Co. v. Nat. Res. Def. Council, Inc.*, 462 U.S. 87, 103 (1983). BOEM's area of expertise is the management of "conventional (e.g., oil and gas) and renewable energy-related" functions, including "activities involving resource evaluation, planning, and leasing." U.S. Dep't of Interior, Sec. Order No. 3299A2, Establishment of the Bureau of Ocean Energy Management, the Bureau of Safety and Environmental Enforcement, and the Office of Natural Resources Revenue, § 2 (Aug. 29, 2011). The scope of its expertise does not include the economic analysis of greenhouse gas emissions. Therefore, we do not readily defer to its decision to exclude a discussion of foreign oil consumption, particularly in light of our conclusion that its decision to do so was unreasonable. *See The Lands Council v. McNair*, 537 F.3d 981, 993 (9th Cir. 2008), *overruled in part on other grounds by Winter v. Nat. Res. Def. Council, Inc.*, 555 U.S. 7 (2008).

In short, the EIS "should have either given a quantitative estimate of the downstream greenhouse gas emissions" that will result from consuming oil abroad, or "explained more specifically why it could not have done so," and provided a more thorough discussion of how foreign oil consumption might change the carbon dioxide equivalents analysis. *Sierra Club*, 867 F.3d at 1374. BOEM has the statutory authority to act on the emissions resulting from foreign oil consumption. If it later concludes that such emissions will be significant, it may well approve another alternative included in the EIS or deny the lease altogether. *Cf. Dep't of Transp. v. Public Citizen*, 541 U.S. 752, 766–68, 770 (2004). For these reasons, we agree with CBD that BOEM's alternatives analysis in the EIS was arbitrary and capricious.

III. ESA

A. Section 7 Consultation and Section 9 Take Regulation

CBD next challenges FWS's compliance with the ESA. In accordance with NEPA's requirements, FWS prepared for BOEM a biological opinion that discusses the effects of the project on all threatened species and their habitats in the Bay. In the opinion, FWS concluded that polar bears—which are classified as threatened marine mammals—were present in the project area, but that the project was unlikely to jeopardize their continued existence or adversely modify their habitat. CBD argues that FWS violated the ESA because portions of its biological opinion and incidental take statement were arbitrary and capricious.

The Department of the Interior and, by delegation, FWS, is responsible for implementing the ESA. *See* 16 U.S.C. § 1531 *et seq*. Section 9 of the ESA regulates the "taking" of a threatened or endangered species. It prohibits "any person"—including an "instrumentality" of federal, state, or municipal government, *see id*. § 1532(12), (13)—from, among other things, "taking" endangered wildlife, fish, or plants, *id.* § 1538(a). A "take" occurs under the ESA when an animal is harassed, harmed, pursued, hunted, shot, wounded, killed, trapped, captured, or collected, or when anyone attempts to engage in such conduct. *Id.* § 1532(19).

FWS may issue a temporary permit approving conduct normally barred by Section 9 if the taking is incidental to an otherwise lawful activity. *Id.* § 1539(a)(1)(B). Before FWS may issue such a permit, it must find that (1) the applicant will minimize and mitigate the negative impacts of the taking; (2) the applicant will ensure adequate funding for the plan; and (3) the taking will not appreciably reduce the

likelihood of the survival and recovery of the species in the wild. *Id.* § 1539(a)(2)(B).

Section 7 of the ESA describes the process for agency consultation. Unlike Section 9, it does not contain an outright prohibition on take; it requires only that an agency consult with FWS or NMFS before it takes any action that may affect a species listed as threatened or endangered under the ESA. *See id*. § 1536(a)(2), (4).

"Section 7 consultation" begins with an assessment of the species affected by the action. If a threatened or endangered species "may be present" in the area of the proposed action, the agency must conduct a biological assessment to determine whether the species will be adversely affected by the project. *Id.* § 1536(c)(1); *see also* 50 C.F.R. § 402.14(a). If BOEM concludes that the species is likely to be adversely affected, it must initiate formal consultation with either FWS or NMFS (here, FWS). After formal consultation, FWS issues a written opinion (a "biological opinion," or "BiOp"), concluding either that the project is unlikely to adversely affect the species or that the action will likely jeopardize the species or adversely modify its critical habitat. *See* 16 U.S.C. § 1536(b)(3)(A). If FWS determines that the proposed action is likely to jeopardize the species or modify its habitat, then it must suggest reasonable and prudent alternatives that could be taken by the agency. *Id*; *see also* 50 C.F.R. § 402.14(g).

If, however, FWS determines that the proposed action will neither harm the species nor adversely modify its habitat, it may authorize the taking of a species incidental to the proposed project. 16 U.S.C § 1536(b)(4). To determine whether the action will ultimately jeopardize a listed species or adversely modify its habitat, the agency may rely on mitigation measures proposed by the project planners. *See*

Selkirk Conservation All. v. Forsgren, 336 F.3d 944, 955 (9th Cir. 2003).

When the agency authorizes the incidental taking of a species, it must also issue an "incidental take statement" with the biological opinion. 50 C.F.R. § 402.14(i); *Ctr. for Bio. Diversity v. Salazar*, 695 F.3d 893, 909 (9th Cir. 2012). The incidental take statement estimates the amount of the project's incidental take of the listed species, includes any "reasonable and prudent measures" considered "necessary or appropriate to minimize such impact," and—in the case of marine mammals like the polar bear—describes specific measures necessary to comply with the aforementioned provisions of the MMPA. 50 C.F.R. § 402.14(i)(1); *see also Salazar*, 695 F.3d at 909; 16 U.S.C. § 1536(b)(4). The statement also describes the terms that must be followed by BOEM or the applicant to implement any mitigation measures specified in the statement. 16 U.S.C. § 1536(b)(4). A taking that complies with the terms and conditions of a Section 7 incidental take statement is not prohibited by Section 9. *Salazar*, 695 F.3d at 909; 16 U.S.C. § 1536(o)(2); 50 C.F.R. § 402.14(i)(5).

B. Coordination between the ESA and the MMPA

The MMPA prohibits the take or harassment of animals, but its scope is narrower and its procedures distinct from those of Sections 7 and 9 of the ESA. It entirely prohibits the take of marine mammals in U.S. waters. "Take" in the MMPA is similar to "take" under Section 9 of the ESA; the MMPA defines it as encompassing, among other things, "harassment," "torment," or "annoyance" which "has the potential to injure . . . or . . . disturb a marine mammal . . . in the wild by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing,

breeding, feeding, or sheltering." 16 U.S.C. § 1362(13), (18)(A)(i)–(ii); *see also id.* § 1371(a).

As under the ESA, the MMPA allows FWS to permit the incidental take of "small numbers" of marine mammals pursuant to a specified activity for a limited period. The total incidental take must have a "negligible impact" on the species and cannot have an "unmitigable adverse impact" on the availability of the species for specified subsistence uses. 16 U.S.C. § 1371(a)(5)(A); *see also* 50 C.F.R. § 18.27(b). If the incidental take meets these requirements, FWS may then prescribe regulations setting forth permissible methods of taking the species in question and describing methods of effecting the least adverse impact possible on the species and its habitat. *See* 50 C.F.R. § 18.27(b). The regulations are subject to public notice-and-comment. 16 U.S.C. § 1371(a)(5)(D)(iii). Once the regulations are finalized and promulgated, FWS issues individual letters of authorization to the agency, authorizing the project and the take. *Id.*

Both the ESA and the MMPA apply when, as here, an agency seeks approval for the incidental take of threatened and endangered marine mammals. The MMPA is more restrictive than the ESA; when the two statutes conflict, the relevant MMPA provision applies. *Id.* § 1543. FWS cannot issue an incidental take statement authorizing the take of an endangered or threatened species under the ESA until the take has been authorized under the MMPA. *See id.* § 1536(b)(4)(C); *see also* Incidental Take of Endangered, Threatened, and Other Depleted Marine Mammals, 54 Fed. Reg. 40,338, 40,346 (Sept. 29, 1989), codified at 50 C.F.R. §§ 18.27, 228, 402.14. The incidental take statement must incorporate any mitigation measures required under the MMPA. 50 C.F.R. § 402.14(i)(1)(iii).

In consultation with BOEM, FWS issued a BiOp authorizing the Liberty project's incidental take of polar bears. 16 U.S.C. § 1536(b)(4). The BiOp acknowledges that Liberty may "adversely affect polar bears through disturbance, an increase in polar bear-human interactions, and habitat loss," and concludes that denning polar bear mothers and cubs are most likely to be affected, because they are the most sensitive to the disturbance caused by the project. The disturbance from the project is expected to include (1) construction, drilling, production operations, maintenance, and ancillary activities associated with the project; (2) noise and disturbance caused by aircraft, vessel, hovercraft, and vehicle traffic; and (3) drilling and production activities. The BiOp concludes that the proposed action is "not likely to jeopardize the continued existence of polar bears by reducing appreciably the likelihood of survival and recovery in the wild by reducing reproduction, numbers, or distribution of this species."

CBD argues that FWS violated the ESA by (1) relying on uncertain, insufficiently specific mitigation measures in reaching its no-jeopardy and no-adverse-modification conclusions, and (2) failing to specify the amount and extent of "take" in the incidental take statement included within the BiOp.

C. Inadequacy of FWS's Mitigation Measures

Throughout the BiOp, FWS describes mitigation measures intended to alleviate the harm caused to polar bears by the Liberty project. CBD argues that the mitigation measures violate the ESA for two closely related reasons. First, the measures themselves are not sufficiently specific, binding, or certain to occur. Second, FWS relied on these non-binding mitigation measures to reach both its "no jeopardy and no adverse modification" conclusions for polar

bears and their critical habitats, respectively. The government responds that FWS did not rely on the mitigation measures and, even if it did, the mitigation methods are enforceable and sufficiently specific.

1. Enforceability of the BiOp's Mitigation Measures

We first address whether the mitigation measures in FWS's BiOp are sufficiently binding or certain to occur. Mitigation measures relied upon in a biological opinion must constitute a "clear, definite commitment of resources," and be "under agency control or otherwise reasonably certain to occur." *Nat'l Wildlife Fed. v. Nat'l Marine Fisheries Serv.*, 524 F.3d 917, 936 & n.17 (9th Cir. 2008). A "sincere general commitment to future improvements"—without more specificity—is insufficient. *Id.* at 935–36. The measures "must be subject to deadlines or otherwise-enforceable obligations; and most important, they must address the threats to the species in a way that satisfies the jeopardy and adverse modification standards." *Ctr. for Bio. Diversity v. Rumsfeld*, 198 F. Supp. 2d 1139, 1152 (D. Ariz. 2002).[6] Binding mitigation measures cannot refer only to generalized contingencies or gesture at hopeful plans; they must describe, in detail, the action agency's plan to offset the environmental damage caused by the project.

If an action agency fails to carry out the mitigation measures contained in a BiOp, it must re-initiate consultation with FWS. *See Ctr. for Bio. Diversity v. U.S. Bureau of Land Mgmt.*, 698 F.3d 1101, 1115 (9th Cir. 2012)

[6] District courts in this circuit follow the standard articulated by *Rumsfeld*. *See, e.g.*, *AquAlliance v. U.S. Bureau of Reclamation*, 287 F. Supp. 3d 969, 1071–72 (E.D. Cal. 2018) ("One district court persuasively provided further guidance [regarding when mitigation measures are sufficiently clear and definite].") (citing to *Rumsfeld*).

(citing 50 C.F.R. § 402.16(c)). If the action agency does not re-initiate consultation, the BiOp is invalid and "any person" may bring suit and subject the action agency or the applicant to "substantial civil and criminal penalties." *Id.* (internal quotation marks omitted). An indefinite mitigation measure is less likely to trigger re-consultation because it will be difficult to know at which point or whether the action agency has failed to comply. For this reason, measures that are too vague, or do not commit resources, or are otherwise insufficiently integrated into the proposed action are generally unenforceable under the ESA, and thus cannot be properly relied upon. *See id.* at 1113–14. The measures can be made enforceable in a variety of ways, including by incorporation into the terms and conditions of an incidental take statement. *See id.* at 1114 n.9.

CBD identifies four instances of planned mitigation in FWS's biological opinion. The first two state:

> Available data indicate polar bears regularly den at low densities in the action area. . . . Den abandonment would be most likely to occur during new construction activities because ongoing activities during routine operations would allow more sensitive bears to select an alternative den site. However, the applicant has indicated they would conduct den detection surveys each winter in compliance with [guidance issued under MMPA incidental take regulations] and the project's polar bear interaction plan. These surveys would be planned in cooperation with [FWS]. If dens are detected within 1.6 km of the proposed locations of ice roads

> and pads, then [FWS] will be contacted for guidance.[7]
>
> . . .
>
> As with denning polar bears, [FWS] expects potential adverse effects to non-denning polar bears would be reduced by the applicant's compliance with existing and future authorizations issued under the MMPA . . . . Disturbance that disrupts behavioral patterns of polar bears is classified as take under the MMPA. The MMPA prohibits unpermitted incidental take of marine mammals. Under the MMPA, incidental take is only permitted provided the total of such taking will have no more than a negligible impact on the marine mammal species . . . , and does not have an unmitigable adverse impact on the availability of these species for subsistence uses. . .

Both measures rely principally on yet unapproved and undefined mitigation measures under the MMPA. The government argues that the BiOp's reliance on these measures is authorized under a 2013 Department of Interior rule governing the conservation and protection of polar bears. *See* Endangered and Threatened Wildlife and Plants; Special Rule for the Polar Bear Under Section 4(d) of the Endangered Species Act, 78 Fed. Reg. 11,766 (Feb. 20, 2013), codified at 50 C.F.R. § 17.40(q). The rule

[7] "Den detection surveys" are used to evaluate (with infrared radar, for example) where polar bear dens are located.

"synchronizes the management of the polar bear under the ESA with management provisions under the MMPA[.]" *Id.* at 11,768.

The rule does permit the agency to bypass Section 9 compliance under the ESA once it has obtained a letter of authorization under the MMPA. It states that "if an activity is authorized or exempted under the MMPA," "no additional authorization" under Section 9 of the ESA "for that activity will be required." *Id.*; *see also* 50 C.F.R. § 17.40(q)(2) ("None of the prohibitions in § 17.31 of this part apply to any activity that is authorized or exempted under the Marine Mammal Protection Act (MMPA) . . . provided that the person carrying out the activity has complied with all terms and conditions that apply to that activity under the provisions of the MMPA . . . and [its] implementing regulations."). MMPA protection is considered sufficient because the definition of "take" under the MMPA is "more protective" than take under the ESA. 78 Fed. Reg. at 11,770.

Therefore, "managing take of polar bears under the MMPA adequately provides for the conservation of polar bears." *Id.* Obviously, if incidental take of a threatened marine mammal is not authorized under the MMPA, "then the general [ESA take prohibitions] would apply, and [the Department of Interior] would require a permit for the activity as specified in [its] ESA regulations." *Id.* at 11,766. But, as the rule repeatedly states, it "does not remove or alter in any way the consultation requirements under section 7 of the ESA." *Id.* at 11,768. In other words, FWS's BiOp remains unaffected by the polar-bear rule because it is part of the consultation process under Section 7 of the ESA.

We have already rejected a similar interpretation of the rule, as applied to incidental take statements. *Salazar*, 695 F.3d at 910–11. In *Salazar*, we held that an agency

acted unlawfully by failing to issue an incidental take statement pursuant to Section 7 of the ESA, even though it separately complied with the MMPA prohibitions on marine mammal take. *Id.* at 910. The agency argued that the polar-bear rule preempted any need to publish an incidental take statement. *Id.* But, as we explained, Section 7 imposes a separate requirement for an incidental take statement and biological opinion in certain circumstances. *Id.* The rule itself states that "[n]othing in this special rule affects the issuance *or contents* of the biological opinions for polar bears[.]" 73 Fed. Reg. 76,249, 76,252 (Dec. 16, 2008) (emphasis added). In other words, compliance with 50 C.F.R. § 17.40(q) satisfies the ESA's Section 9 take requirement but does not fulfill the agency's separate and independent Section 7 obligations. *Salazar*, 695 F.3d at 910–11.

So too here. FWS must comply with both Section 7 and Section 9 of the ESA, and approval of polar-bear take under the MMPA will meet the agency's obligations only under Section 9. The rule does not preclude or preempt FWS's responsibility to include the mitigation measures that it relies upon in a biological opinion under Section 7 of the ESA. The agency cannot refer to future, unstated authorizations under the MMPA to fulfill its obligations under Section 7.[8]

[8] FWS, NMFS, and two other federal agencies have also issued guidance suggesting they did not contemplate that MMPA compliance would automatically satisfy an action agency's Section 7 obligations. The timelines between the MMPA and ESA differ substantially; the ESA process generally requires that Section 7 consultation be completed within 90 days, 16 U.S.C. § 1536(b)(1)(A), (B), but the MMPA approval process can take much longer because it requires public notice-and-comment. The agencies recommend that action agencies handle timing discrepancies in one of three ways. First, the action agency may "consider initiating the MMPA [] process in advance of the ESA section

Reliance on future MMPA measures is particularly inappropriate to satisfy the agency's Section 7 obligations here, where the authorizations under the MMPA last for only five years, *see* 16 U.S.C. § 1371(a)(5)(A), and the Liberty project is expected to last fifteen to twenty years.

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7 process." 54 Fed. Reg. at 40,346. The MMPA requirements can then "be incorporated into the ESA incidental take statement when the biological opinion is issued and subsequent revisions would not be necessary." *Id.* Second, FWS and the action agency may together agree to extend the Section 7 consultation under the ESA "to accommodate completion" of the MMPA regulations. *Id.* Or, third, the action agency may begin "early consultation" with the ESA, and request a "preliminary biological opinion." *Id.* Once the MMPA process is completed, the opinion "would be reviewed and the . . . incidental take statement amended or added, as appropriate." *Id.*

Whichever route the action agency chooses, the Department of Interior "is expected to proceed with issuance of the biological opinion and . . . incidental take statement in a timely manner" as Section 7 consultation requires. 99th Cong. 32,185 (1986) (statement of Rep. Jones). The agency should "indicate that the findings and conditions applicable to affected marine mammals are subject to final completion of the MMPA" process and "that the statement would subsequently be revised to reflect the outcome of that review." *Id.* "In this situation," as the statute reflects, "incidental take of listed marine mammals would not be authorized under the ESA" until *after* "the MMPA and the section 7[] incidental take statement has been revised." *Id.*; *see also* 16 U.S.C. § 1536(b)(4)(C).

In other words, even if the action agency obtains MMPA approval, the take statement must be "subsequently revised" to reflect that approval, and authorization will not occur under after the statement has been revised. At no point does the guidance issued by FWS suggest that Section 7 approval occurs automatically, upon MMPA approval. Indeed, all three options suggested in the guidance recommend that the action agency complete the MMPA approval process *before* seeking final Section 7 consultation and approval.

The third proposed mitigation measure states:

> Additional information on possible minimization measures that would reduce effects to polar bears from oil and gas industry activities can be found in the [2016 generalized list on mitigation measures used in the Beaufort Sea].

This measure references "possible" strategies, without selecting a mitigation measure from the incorporated list or committing BOEM or Hilcorp to carrying out any specific number of measures. These noncommittal assurances cannot shoulder the government's burden to identify a "clear, definite commitment of resources." *Nat'l Wildlife Fed'n*, 524 F.3d at 936*; see also Sierra Club v. Marsh*, 816 F.2d 1376, 1388 (9th Cir. 1987) (concluding that "one of several 'reasonable and prudent alternatives' that the FWS found necessary to minimize the project's effects" was not reasonably certain to occur), *abrogated on other grounds as recognized in Cottonwood Envtl. Law Ctr. v. U.S. Forest Serv.*, 789 F.3d 1075, 1088–91 (9th Cir. 2015).

The fourth and final measure states:

> Mitigation measures applied to ensure least practicable impacts include requirement of site-specific plans of operation and site-specific polar bear interaction plans. In combination, these plans reduce attraction to bears (e.g., through garbage disposal procedures, snow management procedures) and provide training and other measures to eliminate the potential for injurious or lethal take of bears in defense of human life in the event that encounters occur. Other mitigation

> measures may be required on a case-by-case basis, such as use of infra-red thermal technology or trained dogs to determine presence or absence of dens in suitable denning habitat; measures to protect pregnant polar bears during denning activities (den selection, birthing, and maturation of cubs); and limiting industrial activities near barrier islands . . . This incidental-take program and the associated mitigation measures have effectively limited human-bear interactions and disturbance to bears, ensuring that, at least to date, industry effects have had a negligible impact on bears.

This contains the most concrete mitigation strategies found in the BiOp, but even these suggestions do not truly commit to the development of mitigation strategies. The few concrete strategies provided are offered only as *examples* of possible strategies that could be taken, "in the event that encounters occur." It is unclear what will constitute a polar bear encounter or commit the action agency to carrying out any of the mitigation measures listed in the examples provided. It concludes that "[o]ther mitigation measures may be required on a case-by-case basis," a statement which, alone, also does nothing to bind BOEM when the need for those measures apply. *See, e.g.*, *Rumsfeld*, 198 F. Supp. 2d at 1153 (explaining that a "laundry list of possible mitigation measures" is unenforceable). A mitigation strategy's eventual MMPA approval does not change this analysis because, as we have held, MMPA authorization does not alter the agency's obligations under Section 7 of the ESA.

We agree with CBD that the mitigation measures proposed by FWS are too vague to enforce. The

administrative record does reflect a "general desire" to impose mitigation strategies, but it does not reflect a definite commitment to those improvements. The generality of the mitigation measures makes it difficult to determine the point at which the action agency may renege on its promise to implement these measures. "[S]incere general commitment[s] to future improvement" are insufficient under Section 7. *Nat'l Marine Fisheries Serv.*, 524 F.3d. at 935–36.

2. Reliance on Mitigation Measures

Our conclusion that the mitigation measures in the BiOp are insufficiently specific to enforce has no legal consequence unless we separately conclude that FWS relied on those measures. The government and Hilcorp argue that because the overall magnitude of the negative effect on polar bears is estimated to be low, FWS did not rely on any of its mitigation measures to reach its no-jeopardy and no-adverse-modification findings.

Whether FWS relied on the proposed mitigation measures in reaching its conclusion depends on the language and structure of the BiOp. A BiOp that integrates mitigation measures into its decision-making is more likely to have relied upon those measures. Conversely, an opinion that relies upon indefinite "background cumulative effects" and uses those effects "as a basis for determining the likely effects" of the proposed project, for example, renders the agency's reliance on that opinion arbitrary and capricious. *See Ctr. for Bio. Diversity*, 698 F.3d at 1113. To be enforceable, those effects "should properly have been part of the project itself." *Id.*; *see also Nat'l Wildlife Fed'n v. Nat'l Marine Fisheries Serv.*, 839 F. Supp. 2d 1117, 1125–26 (D. Or. 2011) (holding that the agency improperly relied on habitat mitigation measures that "in some cases [were] not

even identified" and the agency had "assume[d] it w[ould] be able to identify and implement the additional projects that are necessary"); *Ctr. for Bio. Diversity v. Salazar*, 804 F. Supp. 2d 987, 1002 (D. Ariz. 2011) (concluding that a biological opinion that relied on water saving mitigation projects where the court could not ascertain the details of the planned projects or the estimated water savings was unlawful).

The portion of the BiOp describing FWS's no-jeopardy and no-adverse modification findings is brief. Its no-jeopardy conclusion states:

> A small number of polar bears may also be adversely affected through disturbance or polar bear-human interactions which may include intentional take. These adverse effects are expected to impact only small numbers of individuals . . . and therefore, we do not expect population-level impacts as a result of the proposed Liberty DPP. After reviewing the current status of the species, environmental baseline, effects of the action, and cumulative effects, [FWS] concludes the proposed action is *not likely to jeopardize the continued existence* of polar bears by reducing appreciably the likelihood of survival and recovery in the wild by reducing reproduction, numbers, or distribution of this species.

FWS appears to conclude that the Liberty project, as a whole, will not significantly impact polar bears, with or without the mitigation measures. We conclude FWS did not

rely on any of the aforementioned mitigation measures in its no-jeopardy determination.

But in concluding that the bears' critical habitat will not be adversely affected by the project, FWS relied on three stated factors, the second of which incorporates the mitigation measures. Specifically, the second basis for FWS's no-adverse-modification finding is that the "terms and conditions associated with authorizations under the MMPA would minimize the level of persistent disturbance that may result from the Proposed Action[.]"

As discussed, unauthorized, future mitigation measures under the MMPA cannot satisfy the FWS's obligations under Section 7 of the ESA. The mitigation measures proposed in the BiOp are indefinite and do not constitute a "clear, definite commitment of resources," and FWS's reliance upon those measures to conclude that the polar bear's critical habitat would not be adversely modified by the Liberty project was arbitrary and capricious. For these reasons, we hold that FWS's BiOp violated the ESA. We further hold that FWS did not rely on its indefinite mitigation measures in finding that the polar bear's continued existence would not be jeopardized by the project.

D. Incidental Take

We next evaluate whether FWS unlawfully failed to specify the amount and extent of "take" in its incidental take statement. The ESA requires an incidental take statement where FWS concludes, as here, that a project will not jeopardize a species or modify its critical habitat. The purpose of the incidental take statement is, at least in part, to specify the amount of take that may occur, and include triggers that indicate non-compliance with the statement and require re-consultation with FWS. *See* 16 U.S.C.

§ 1536(b)(4); 50 C.F.R. § 402.14(i)(l)(i). To "specify the impact" of any incidental take, the statement should either include a numerical cap on take or explain why it does not include the cap. *Ctr. for Bio. Diversity*, 698 F.3d at 1127. The numerical cap establishes a threshold that, when exceeded, results in an unacceptable level of take and requires parties to re-initiate Section 7 consultation. *Ariz. Cattle Growers Ass'n v. U.S. Fish and Wildlife*, 273 F.3d 1229, 1249 (9th Cir. 2001).

The statement can use a proxy measure for take where "no number may be practically obtained." *Ctr. for Bio. Div*, 698 F.3d at 1126–27 (internal quotation marks omitted). For example, where an agency is unable to quantify the number of endangered or threatened fish that will be taken, it may instead estimate the project's impact on the number of eggs laid by those fish. *Id.* (citing H.R. Rep. No. 97-567, at 27 (1982)). Take can also be expressed as a change in habitat affecting the species (e.g., for "aquatic species, changes in water temperature or chemistry, flows, or sediment loads"), but "some detectable measures of effect should be provided." *Ariz. Cattle Growers*, 273 F.3d at 1250 (quoting Final ESA Section 7 Consultation Handbook, March 1998 at 4-47–4-48). When it relies upon a proxy, the agency must explain why it cannot directly quantify the animal's expected take. *See Or. Nat. Resources Council v. Allen*, 476 F.3d 1031, 1037–38 (9th Cir. 2007) (holding that FWS erred in quantifying the expected take of northern spotted owls in terms of habitat acreage without explaining why the agency was unable to numerically estimate take).

CBD argues that FWS failed to quantify the amount of nonlethal take in its incidental take statement. The government argues that any nonlethal disturbance does not rise to the level of take, and so FWS did not need to quantify

any nonlethal take that may occur as a result of the project. We agree that FWS contemplated that nonlethal harassment of polar bears may rise to the level of "take" under the ESA and should have quantified the nonlethal take of the bears.

In the BiOp, FWS does provide a numerical cap on the amount of take that constitutes injury or death to polar bears; injury or death to more than one polar bear triggers re-consultation:

> As provided in 50 C.F.R. 402.16, re-initiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law), and re-initiation may be required if:
>
> 1. The amount or extent of incidental take for listed species is exceeded over the life of the project;
>
>   a. . . .
>
>   b. If human-polar bear interactions result in injury and/or death of more than 1 polar bear over the life of the project.

But FWS does not quantify the amount of other types of incidental take that the Liberty project may cause. Take under the ESA can occur via injury or death, as the BiOp recognizes, but it can also occur via nonlethal harassment. *See* 16 U.S.C. § 1532(19). FWS interprets "harassment" of an animal to have occurred under the ESA when an entity, either intentionally or negligently, "creates the likelihood of injury to wildlife by annoying it to such an extent as to

significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering." 50 C.F.R. § 17.3(c). The MMPA includes an even broader view of "harassment" than the ESA—"harassment" includes actions which "ha[ve] the potential to disturb a marine mammal . . . by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering." 16 U.S.C. § 1362(18)(A).

Though it now argues otherwise, it appears that FWS contemplated these types of nonlethal take in its biological opinion. It noted that polar bears might face disturbance from "polar bear-human interactions," and "ground-level activities within the action area," including "construction of the LDPI, drilling activities, facility operations, pipeline construction and maintenance, mine site development, ice road construction and associated vehicle traffic, and air traffic." "In addition to disturbance from ground-level activities within the action area, air traffic associated with the Liberty DPP could potentially disturb polar bears, affecting the success or likelihood of denning in the action area." "Denning females may also be more likely to abandon their dens in the fall before cubs are born and relocate if disturbed. . . . Den abandonment would be most likely to occur during new construction activities because ongoing activities during routine operations would allow more sensitive bears to select an alternative den site." These disturbances implicate disruptions in behavioral patterns contemplated in the ESA and MMPA, such as polar bears' breeding and sheltering.

Two different portions of FWS's biological opinion suggest that FWS contemplated that these expected disturbances rise to the level of nonlethal take. In its

discussion on the effects of these disturbances on polar bears, FWS noted that

> The potential that disturbance will indirectly reduce the value of polar bear critical habitat would be significantly reduced by other existing regulatory programs that directly address the disturbance of polar bears. As described previously, the MMPA allows for incidental, non-intentional take from harassment of small numbers of marine mammals during specific activities[.]

The BiOp then lists the potential mitigating consequences of future measures authorized under the MMPA. This list suggests that FWS considered that such indirect harassment would rise to the level of "incidental, non-intentional take" under the MMPA, and that mitigation measures might alleviate the severity of such take.

More pointedly, a later section of FWS's BiOp states that re-initiation of formal consultation may be required if:

> New information reveals effects of the action that may affect listed species in a manner or to an extent not considered in this opinion (e.g., if observations in the Liberty DPP action area indicate levels of interaction with polar bears, especially the need for hazing, is increasing significantly over time, or is resulting in chronic or repeated interference with normal polar bear behavior).

FWS explains that the "levels of interaction with polar bears, especially the need for hazing"[9] is itself a trigger for further re-consultation: if interaction with the bears increases significantly or results in chronic, repeated interference with normal bear behavior, FWS requires re-consultation. Considering "levels of interaction" as a trigger suggests that this type of non-lethal harassment amounts to incidental take and requires FWS to provide an estimate for such take. *See Ariz. Cattle Growers*, 273 F.3d at 1249.

This trigger is particularly important here, where FWS asserted that any take approved under the MMPA would take effect without further action by FWS. As the incidental take statement stands, there is no guarantee that these "harassment" take provisions—once they are made enforceable by authorization under the MMPA—will contain the numerical triggers required by the ESA.

Because FWS contemplated that the harassment and disturbances polar bears will suffer could trigger re-consultation with FWS and did not quantify the nonlethal take that polar bears are expected to face (or explain why it could not do so), we hold that FWS's incidental take statement violated the ESA. It was therefore arbitrary and capricious under the APA.

[9] "Hazing" polar bears refers to actions taken to deter them from entering a worksite. "Polar bears may need to be hazed if they approach Liberty DPP infrastructure when humans are present (e.g., the work surface of the LDPI). Although the partial sheet pile wall may prevent some polar bears from accessing the LDPI, others may gain access to areas occupied by humans and require hazing." Bears can be hazed by using loud noises (starting a car or revving an engine), or by using stronger mechanisms (such as chemical repellants, electric fences, or "firearm projectiles").

IV. BOEM's Reliance on the Invalid BiOp

Finally, we evaluate whether BOEM's reliance on FWS's biological opinion in its approval of the Liberty project was arbitrary and capricious. Section 7 of the ESA imposes a duty on BOEM to ensure that its actions are not likely to jeopardize the continued existence of the listed species or result in destruction or adverse modification of its critical habitat. *Ctr. for Bio. Diversity*, 698 F.3d at 1127–28. An agency cannot meet its Section 7 duties by relying on a legally flawed biological opinion or failing to discuss information that might undercut the opinion's conclusions. *See id*. Because we conclude that FWS's biological opinion is, at least in part, invalid, BOEM's reliance on it is unlawful.

V. Relief

We vacate BOEM's approval of the Liberty project. We conclude that BOEM acted arbitrarily and capriciously by failing to quantify the emissions resulting from foreign oil consumption in its EIS as required by NEPA, or, at least, explaining thoroughly why it cannot do so and summarizing the research upon which it relied. We also hold that FWS violated the ESA by (1) relying upon uncertain, nonbinding mitigation measures in reaching its no-adverse-effect conclusion in its biological opinion, and (2) failing to estimate the Liberty project's amount of nonlethal take of polar bears. Because we conclude that FWS's biological opinion is flawed and unlawful, we conclude that BOEM's reliance on FWS's opinion is arbitrary and capricious. In all other respects, we deny the petition for review.

The petition for review is **GRANTED** in part and **DENIED** in part. BOEM's approval of the Liberty project is **VACATED** and this action is **REMANDED** to the

agency for further proceedings consistent with this opinion. CBD shall recover its costs.

Appendix

APA	Administrative Procedure Act
BOEM	Bureau of Ocean Energy Management
BiOp	Biological opinion
CBD	Center for Biological Diversity
EIS	Environmental Impact Statement
ESA	Endangered Species Act
FWS	U.S. Fish and Wildlife Service
MMPA	Marine Mammal Protection Act
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
OCSLA	Outer Continental Shelf Lands Act